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Advance Program



Optical Signal Processing for C³I

(Command, Control,
Communications & Intelligence)

Sponsored by:

Rome Air Development Center

October 29-30, 1979
Boston Marriott Hotel
Newton, Massachusetts

ADVANCE REGISTRATION

SPIE's Optical Signal Processing for C³I Technical Seminar • October 29-30, 1979

Mail this form to: SPIE, P. O. Box 10, Bellingham, WA 98225, or phone 206/676-3290. Space is limited. Attendees may avoid delay and insure participation by using this form.

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I am a member of the following professional societies: _____

TUITION FEES

	Full Fee	One-Day Fee*	
		Mon.	Tues.
Member SPIE or a government or university employee	<input type="checkbox"/> \$ 95	<input type="checkbox"/> \$55	<input type="checkbox"/> \$50
Nonmember	<input type="checkbox"/> \$110	<input type="checkbox"/> \$65	<input type="checkbox"/> \$60
Proceedings (attendees only)	<input type="checkbox"/> \$ 26		

The full tuition fee includes attendance at all technical sessions, Monday luncheon, Monday SPIE-hosted reception, and Tuesday Continental breakfast. *Persons wishing to attend sessions on one day only may apply for the one-day tuition rate which includes the meal functions scheduled for that day.

CANCELLATION POLICY. No refunds will be made on cancellations received after Oct. 22, 1979. Individuals forfeiting registration will receive one copy of the official Proceedings.

HOTEL RESERVATION FORM

Fill out and mail this form directly to: Boston Marriott Hotel, Commonwealth Avenue at Rt. 128 & Massachusetts Turnpike, Newton, MA 02166. (Telephone: 617/969-1000.)

I will attend the SPIE "Optical Signal Processing for C³I" Seminar, Oct. 29-30, 1979. Please reserve a room at these special reduced rates:

☐ \$54 single ☐ \$60 twin or double

BOSTON MARRIOTT HOTEL INFORMATION

The Boston Marriott Hotel has reserved a limited block of rooms at special reduced rates for seminar attendees. Accommodations cannot be guaranteed after this block has been exhausted or if reservations are made later than Oct. 6, 1979. Reservations made after this time will be accepted on a first-come, first-served basis, according to availability.

Those attendees preregistered and prepaid may go directly to the SPIE Prepaid Express Desk and pick up their badge with no waiting in registration line.

PROCEEDINGS ORDER FORM

☐ I am unable to attend the SPIE Optical Signal Processing for C³I seminar, but would like to order the Proceedings.

Vol. 209 Optical Signal Processing for C³I (Command, Control, Communications and Intelligence)

Nonattendee
Member ☐ \$30 **Nonmember** ☐ \$37

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☐ **SPIE MEMBERSHIP.** Attendees of this seminar who have never held membership in SPIE may apply for Society membership for \$15 (regular membership rate in \$30). Membership applications are subject to the approval of the membership committee. This application will not apply to reduced member rate for this seminar.

Send me information on the following:

☐ SPIE Membership. ☐ Exhibit information.

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OPTICAL SIGNAL PROCESSING FOR C³I

(Command, Control, Communications & Intelligence)

Presented by SPIE and
Sponsored by
Rome Air Development Center
SPIE Proceedings Volume 209

October 29-30, 1979
Boston, Massachusetts

Seminar Chairman
William J. Miceli
Rome Air Development Center, Hanscom AFB

Seminar Co-Chairmen
Norman J. Berg, Harry Diamond Laboratories; John Burgess, Rome Air Development Center; H. John Caulfield, Aerodyne Research, Inc.; David Casasent, Carnegie-Mellon University; Michael C. Hamilton, Air Force Avionics Laboratory; Sam Horvitz, Naval Undersea Systems Center; John A. Neff, Air Force Office of Scientific Research; Richard Picard, Rome Air Development Center; William T. Rhodes, Georgia Institute of Technology; Gerhard Sauer-
mann, The Mitre Corporation.

REGISTRATION AND INFORMATION HOURS

Sunday, Oct. 28. 6:00 p.m.-9:00 p.m.
Monday, Oct. 29. 7:30 a.m.-5:00 p.m.
Tuesday, Oct. 30. 8:00 a.m.-1:00 p.m.

EXHIBIT HOURS

Monday, Oct. 29. 10:00-10:30 a.m.
1:00-1:30 p.m., 3:00-3:30 p.m., 5:30-6:30 p.m.
Tuesday, Oct. 30. 8:00-8:30 a.m.
10:00-10:30 a.m., 1:00-1:30 p.m., 3:00-3:30 p.m.

SPIE MESSAGE CENTER TELEPHONE
617/969-1000

Ask for SPIE Message Center. Will take messages during registration hours.

Sunday, Oct. 28

Early Bird Registration. 6:00-9:00 p.m.

Monday, Oct. 29

Registration. 7:30 a.m.-5:00 p.m.
Instrument Display. 10:00-10:30 a.m.
1:00-1:30 p.m., 3:00-3:30 p.m., 5:30-6:30 p.m.

Introduction. 8:30 a.m.
Col. Donald J. Stukel, Rome Air Development Center, Griffiss AFB.

SESSION 1

OVERVIEW OF C³I REQUIREMENTS AND SIGNAL PROCESSING TECHNIQUES. Chairman, John Burgess, Rome Air Development Center, Griffiss AFB.

Overview of C³I, John Burgess, Rome Air Development Center, Griffiss AFB. [209-02]

Tutorial Overview of Signal Processing Techniques, Tien F. Tao, Naval Postgraduate School. [209-03]

Operations Achievable in Optical Systems—A Review, David Casasent, Carnegie-Mellon Univ. [209-04]

Overview of Air Force Research in Optical Processing for C³I, John A. Neff, Air Force Office of Scientific Research. [209-05]

Incoherent Optical Processing, William T. Rhodes, Georgia Institute of Technology. [209-06]

Hybrid Video Encoding for Real-Time Digital Image Transmission, George Eichmann, R. Stirbl, R. Mammone, City College of the City Univ. of New York. [209-07]

SPIE Hosted Lunch. noon-1:00 p.m.

SESSION 2. 1:30

APPLICATIONS—RADAR AND COMMUNICATIONS. Chairman, Sam Horvitz, Naval Underwater Systems Command.

Radar Signal Processing Requirements, Vincent Vannicola, Rome Air Development Center, Griffiss AFB. [209-08]

Phased-Array Processing with TITUS Display: Technological Implications, Guy LeBreton, Eric De

Bazelaire, University of Toulon, France. [209-09]

Optical Processors for Adaptive Phased-Array Radars, David Casasent, Dimitri Psaltis, B. V. K. Kumar, Mark Carlotto, Carnegie-Mellon Univ. [209-10]

Optical Generation of Radar Ambiguity Functions, Robert V. Markévitch, Ampex Corporation. [209-11]

Spread Spectrum Communication Systems, John Cafarella, MIT Lincoln Laboratory. [209-12]

Acousto-Optical Processing of Radar and Communications Band Signals, Norman J. Berg, J. N. Lee, M. W. Casseday, I. Abromovitz, Harry Diamond Laboratories. [209-13]

Number Theoretic Transform Modular Residue Processors, George Eichmann, J. Keybl, R. Mam-mone, City College of the City Univ. of New York. [209-14]

SPIE Hosted Reception.....5:30-6:30 p.m.

Tuesday, Oct. 30

SPIE Hosted Continental Breakfast.8:00-8:30 a.m.

Registration.....8:00 a.m.-1:00 p.m.

Instrument Display.....8:00-8:30 a.m.
10:00-10:30 a.m., 1:00-1:30 p.m., 3:00-3:30 p.m.

SESSION 3.....8:30 a.m.

APPLICATIONS—IFF, SPECTRUM ANALYSIS.
Chairman, Michael C. Hamilton, Air Force Avionics Laboratory.

IFF Requirements, Richard Wood, Capt. Robert Herron, Rome Air Development Center, Griffiss AFB. [209-16]

Optical Processing with the General Electric Coherent Light Valve, Milton Noble, General Elec-tric Company. [209-17]

Design, Fabrication and Integration of Com-ponents for an Integrated Optic Spectrum Analyzer, Michael K. Barnoski, B. Chen, T. Joseph, J. Lee, O. G. Ramer, W. R. Smith, Jr., Hughes Research Labs. [209-18]

Acousto-Optic Time Integrating Correlators Using

Integrated Optics, Chen Tsai, Carnegie-Mellon Univ. [209-19]

Time Integrating Acousto-Optical Signal Pro-cessors, David Hecht, Peter Guilfoyle, William Oakley, Itek Corporation. [209-20]

Optical Implementation of Statistical Analysis, Georges Bonnet, Eric De Bazelaire, Guy LeBreton, Univ. of Toulon, France. [209-21]

Generalized Optical Matched Filters, H. John Caulfield, R. Haimes, Aerodyne Research, Inc. [209-22]

Lunch noon

SESSION 4.....1:30 p.m.

TECHNOLOGY COMPARISONS AND OTHER APPLICATIONS. Chairman, Gerhard Sauermann, The Mitre Corporation.

Comparison of Acousto-Electric and Acousto-Optic Signal Processing Devices, Richard A. Becker, S. A. Reible, MIT Lincoln Laboratory. [209-23]

Systems Roles for Non-Coherent Optical Signal Processors, William W. Stoner, Science Applica-tions, Inc. [209-24]

Optical Aperture Synthesis: Principles and New Possibilities in Signal Processing, George W. Stroke, State Univ. of New York at Stony Brook. [209-25]

Adaptive Phase Compensation for Atmospheric Optical Communications, Cardinal Warde, Massachusetts Institute of Technology. [209-26]

Integrated SAW/CCD Signal Processing Devices, D. L. Smythe, MIT Lincoln Laboratory. [209-27]

Optical Fiber Devices for Signal Processing, Henry F. Taylor, Rockwell International Science Center. [209-15]

Electro-Optical Deep-Space Surveillance: An Up-date on Teal Amber I, L. E. Dean, C. R. Johnson, H. J. Strasler, Rockwell International; Lt. Paul S. Idell, Rome Air Development Center, Griffiss AFB. [209-28]

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(Command, Control, Communications & Intelligence)

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